Commonwealth of Kentucky
Energy and Environment Cabinet

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Kentucky Division of Water Study Reveals Metals Not Detected in Public Drinking Water; No Correlation to Cancer Incidence in Kentucky

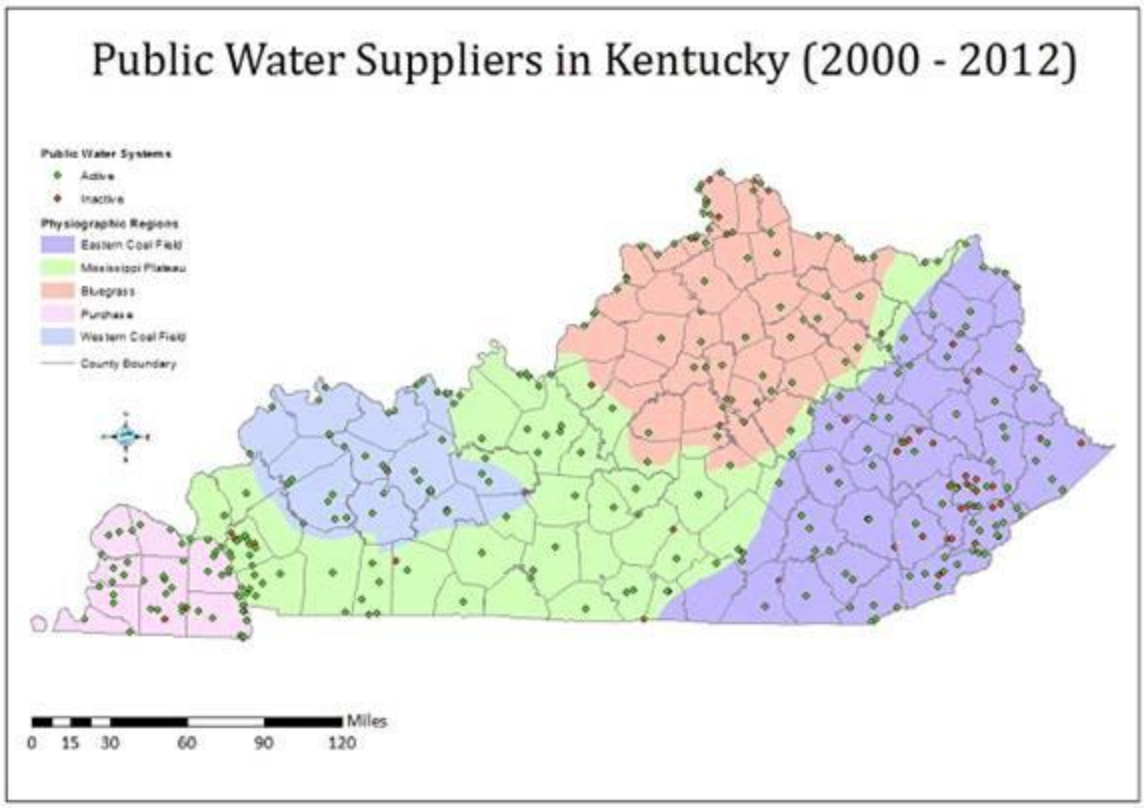
519 public drinking water systems reviewed

(FRANKFORT, Ky.) – June 26, 2013 – The Kentucky Division of Water (DOW) recently completed a study of public drinking water data to determine if heavy metals such as arsenic and chromium were occurring in public drinking water at concentrations that may cause health concerns.

"The DOW study was prompted in part as a result of recent studies that have suggested that exposure to elevated levels of heavy metals like arsenic and chromium in Appalachia contributes to the region's high cancer mortality rates," said R. Bruce Scott, commissioner of the Kentucky Department for Environmental Protection. "Because of these expressed concerns, the agency conducted an extensive analysis of the quality of drinking water in all of Kentucky's public water systems across the Commonwealth."

The study looked at 12 years of data from 2000 through 2012 for all of the 519 public water systems throughout Kentucky, at the time of the study.

"The analysis revealed that heavy metals are not occurring in public drinking water systems at levels that cause health concerns and affirmed that Kentucky's public water supply systems are producing consistently high-quality drinking water," said Department for Environmental Protection commissioner Bruce Scott.



No detection of metals in Kentucky's public water supply:

The federal Safe Drinking Water Act requires Kentucky's public water systems to regularly test their drinking water for inorganic chemicals. Among these substances are arsenic and chromium, as well as a number of other metals and metalloids.

Arsenic and chromium are common elements in the environment, occurring in soils, rocks, and in both surface water and ground water. The U.S. Environmental Protection Agency (EPA) has classified both the metalloid arsenic and the metal chromium as known human carcinogens. The EPA establishes maximum contaminant levels (MCLs) for these substances that public drinking water may not exceed for the protection of human health.

Analytical results in the DOW study indicated arsenic and chromium were below the MCLs – a level considered to be safe – for all samples analyzed over the 12-year period. In fact, neither arsenic nor chromium was detected in public water systems for any of the samples analyzed.

In addition to the carcinogenic metals, the results for other metals for which public water systems are required to monitor, including antimony, barium, beryllium, cadmium, mercury, selenium and thallium were analyzed and their concentrations were also found to be at safe levels (below MCLs) for all of the 519 public water suppliers in Kentucky.

Based on these findings, DOW has determined that there is no correlation between the presence of arsenic and chromium in public drinking water systems and the incidence of cancer in Kentucky.

The study also demonstrated that public drinking water quality in all regions of the commonwealth was very good and DOW did not identify any regional trends or disparities in drinking water quality.

Dow Director Sandy Gruzesky said, “The study is part of the ongoing commitment of the division to ensure the public has access to safe drinking water.”

Kentucky’s public water systems have an exceptional record of compliance with the Safe Drinking Water Act requirements. As discussed in the most recent Annual Compliance Report (ACR) on drinking water quality in Kentucky, “DOW continues to work with public water systems to facilitate access to potable water to all areas of the Commonwealth to ensure public facilities meet state and federal drinking water standards,” said Gruzesky. “An estimated 95 percent of Kentucky’s population has access to public water systems that are producing consistently high-quality drinking water.”

While the quality of public drinking water leaving the public water supply systems is of high quality, drinking water quality issues, such as taste, odor, and discoloration problems, can and do occur for an individual user. These issues may result from variations in the source water, issues in the water supplier’s distribution system, or home plumbing.

The DOW encourages any citizen or business who have concerns with the quality of your drinking water to contact your water provider to report those concerns. The DOW also encourages citizens to read their public water supplier’s annual Consumer Confidence Report which summarizes the public water system’s water quality and identifies any compliance issues.

No correlation observed between the presence of mining and cancer incidence in Kentucky:

Recent studies also have suggested that increased cancer mortality correlates with coal production in Appalachia. Because these concerns have been raised, the DOW study also evaluated the incidence of cancer relative to the amount of coal production in Kentucky’s coal producing counties.

The DOW study indicates that coal production does not appear to be a predictive tool for evaluating the incidence of cancer in a county.

Using the most recently available cancer information from the National Cancer Institute, the DOW compared coal production to cancer incidence in Kentucky. The DOW evaluated the relationship between cancer incidence rates (total invasive, lung and bronchus, and colon and rectum cancers) for the years 2000-2009 using the six highest and six lowest coal producing counties in the Appalachian basin and Illinois basin coal fields in Kentucky.

Although coal production varied from year to year over this period, those counties listed as “high” or “low” have remained generally the same. The top six-coal producing counties averaged 18,618,225 tons of coal produced per year as compared to 977 tons of coal produced for the lowest six coal-producing counties for 2000-2009.

The cancer incidence rates were not significantly different between the two groups of coal-producing counties. The study also revealed that the rate of total cancer incidence does not vary significantly between regions of the Commonwealth. However, cancer mortality rates are higher in the Appalachian counties of Kentucky than in the other regions, including the western Kentucky coal basin.

“A comparison of coal production and invasive cancer indicated that coal production was not a predictive tool for evaluating the incidence of cancer for a county,” said Dr. Albert Westerman, one of the DOW scientists who conducted the study. “The cancer incidence was not significantly higher in the high coal-producing counties as compared to those that produced relatively little coal.”

Read the entire DOW study on the occurrence of metals in treated public drinking water entitled: Potential for Levels of Arsenic and Chromium in Drinking Water to Contribute to the Higher Cancer Rates Found in Eastern Kentucky as Compared to the Rest of the State.

A second DOW report on private drinking water quality will be released in the near future.

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